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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,582	07/28/2006	Jonathan Hughes	WW/3-22353/A/PCT	9664

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EXAMINER	
HRUSKOCI, PETER A	

ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,582	HUGHES ET AL.	
	Examiner	Art Unit	
	/Peter A. Hruskoci/	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2008 and 16 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The disclosure is objected to because of the following informalities: On page 6 line 1 "lingo" is erroneous, and should be changed to – lingo -.

Appropriate correction is required.

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. The viscosity recited in claim 6 appears to be recited in claim 1.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. In claim 1 "the suspended solids…contain mainly lignin" lacks clear antecedent basis in the specification as originally filed, and raises the issue of new matter. It is noted that page 7 of the instant specification is drawn to solid residues which contain mainly lignin, resulting from the separation process, and not to the suspended solids in the fermentation liquor recited in claim 1.

Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 24 "high anionic…equivalent weight below" and "synthetic polymers…C)" are vague and indefinite because it is unclear how these terms further limit the claim.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brink 5,536,325 in view of the Minowa et al. publication "The Characteristics Of Dewatering Ethanol Fermentation Stillage" and Moffett 6,132,625. Brink disclose (see col. 5 line 38 through col. 6 line 60 and col. 9 line 11 through col. 11 line 34) a process for separating suspended solids from a fermentation liquor substantially as claimed. It is submitted that the liquor removed from the distillation stage in Brink would comprise lignin. The claims differ from Brink by reciting the use of an anionic polymer in the separation stage. Minowa et al. disclose (see Abstract) that it is known in the art to add cationic and anionic polymeric coagulants to aid in dewatering ethanol fermentation stillage. Moffett disclose (see col. 3 line 3 through col. 7 line 30) that it is known in the art to add the recited polymers, to aid in flocculating biosolids present in aqueous streams from distilleries including sugars and carbohydrates. It would have been obvious to one skilled in the art to modify the process of Brink by utilizing the recited anionic polymer in view of the teachings of Minowa et al. and Moffett, to aid in dewatering solids in the separation stage. The use of the separation stage prior to the distillation stage, the specific viscosity, charge density, and dose of the anionic polymer, and temperature utilized, would have been an obvious matter of process optimization, depending on the specific liquor treated and results desired, absent a sufficient showing of unexpected results. With regard to claims 13-19, it is submitted

that Moffett as applied above, disclose the use of the recited siliceous materials, and centrifuge or filter in the separation stage or step, respectively.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brink 5,536,325 in view of the Minowa et al. publication "The Characteristics Of Dewatering Ethanol Fermentation Stillage" and Moffett 6,132,625 as above, and further in view of Chieffalo et al. 5,975,439. The claim differs from the references as applied above by reciting that the dewatered solids are subjected to a drying stage and used as solid fuel. Chieffalo et al. disclose (see col. 6 lines 40-64 and col. 36 lines 18-55) that it is known in the art to dewater and dry solids including lignin, and utilize the solids as a fuel. It would have been obvious to one skilled in the art to modify the references as applied above by utilizing the recited drying stage in view of the teachings of Chieffalo, to aid in producing a fuel from the dewatered solids.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 10/523,301 and claims 1-22 of copending Application No. 10/587,583. Although the conflicting claims are not identical, they are not patentably distinct from each other because the process steps recited in the instant claims appear to be fully encompassed by the claims of the copending applications, respectively.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicants argue that the fermentation liquor of Brink does not suggest suspended solids in the fermentation liquor which are mainly lignin or greater than 50% lignin, as presently claimed. It is noted that the process of Brink includes the hydrolysis of a lignocellulosic material. It would appear that the finely dispersed or undissolved solids separated from the fermentation liquor of Brink would include at least some solids containing lignin as in the instant process. It is further noted that the instant specification appears to lack clear antecedent basis for suspended solid which are mainly lignin as recited in instant claim 1, for reasons stated above.

Applicants allege that the Ullmann and Roempp citations support the assertion that the stillage disclosed in Minowa et al. and the aqueous streams treated in Moffett do not contain mainly lignin as recited in the instant claims. The citations have been carefully considered but fail to overcome the above rejections. It is submitted that Brink as applied above was used to teach the use of a solids separation stage for a fermentation liquor or stillage including dispersed or dissolved lignin solids after a distillation or rectification stage. It is noted that Minowa et al. as applied above was used to teach that it is known in the art of liquid purification to add cationic

and anionic polymers to aid in improving the dewatering of a fermentation stillage. It is further noted that suspended solids would appear to be coagulated or flocculated by the addition of the polymers in Minowa et al., to aid in dewatering the stillage. It is further submitted that the teachings of Minowa et al. and Moffett appear to be drawn to the separation of dissolved solids from fermentation stillage and suspended solids from aqueous distillery streams respectively, and do not appear to exclude the separation of dissolved or suspended solids containing mainly lignin. It would have been obvious to one skilled in the art having the teachings of Brink, Minowa et al., and Moffett before him, to modify the process of Brink by utilizing the recited anionic polymer in view of the teachings of Minowa et al. and Moffett, to aid in dewatering solids in the separation stage, absent a sufficient showing of unexpected results..

Applicants allege that a fermentation liquor which contains mainly lignin solid residues has significant advantages as stated on page 7 lines 23-27 of the instant specification. It is noted that lignin solid residues are not recited in instant claims 1. It is further noted that the specific process conditions utilized to produce these residues are not recited in instant claim 1. Claim 1 properly written to overcome the above 35 USC 112 rejections, and include a step for flocculating suspended solids and lignin in the fermentation liquor with the anionic acrylamide copolymers having an anionic content of at least 50% by weight shown in instant Table 1, and the mechanical dewatering step of claim 19, to separate the flocculated suspended solids and lignin as cake solids, would be allowable, upon the filing of proper terminal disclaimers.

Applicants allege that the anionic coagulants disclosed in Minowa et al. represent low molecular weight polymers, and cannot be considered anionic polymers having the intrinsic viscosity recited in instant claim 1. It is submitted that the teachings of Moffett as applied above,

were used to teach the use of anionic polymers having molecular weights greater than 1,000,000, to aid in flocculating suspended solids in aqueous streams. It is further submitted that the anionic polymers utilized in Moffett would appear to include polymers having the intrinsic viscosity recited in claim 1. Furthermore, applicants have not supplied sufficient factual evidence to support the above allegation.

Applicants' arguments concerning Chieffalo et al., appear to be based on the propriety of the combination of Brink, Minowa et al., and Moffett. This combination is deemed properly applied for reasons stated above.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Peter A. Hruskoci/ whose telephone number is (571) 272-1160. The examiner can normally be reached on Monday through Friday from 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter A. Hruskoci/
Primary Examiner
Art Unit 1797

2/20/09